CLAIMS

1. A radar system comprising:

reception-signal-strength-distribution detecting means for transmitting a beam of detection radio waves having a predetermined azimuth width extending from the left to the right of a predetermined azimuth at the center, receiving a reflected wave from a target, changing a central azimuth of the beam, and detecting the distribution of reception signal strengths at predetermined angular intervals and for each predetermined distance; and

target-central-azimuth detecting means for detecting an azimuth corresponding to a vertex of an approximate isosceles triangle as a central azimuth of the target on the basis of a beam azimuth width and reception signal strengths at two azimuths that are a central-azimuth-detecting azimuth width away from each other and located on the left and right of an azimuth corresponding to a maximum value in the reception signal strength distribution within a distance to the target, the approximate isosceles triangle having the beam azimuth width as its base and having two points representing the reception signal strengths on its two oblique sides when the reception signal strength distribution associated with changes in azimuth is expressed in rectangular coordinates.

2. The radar system according to Claim 1, wherein the target-central-azimuth detecting means further comprises means for defining a plurality of central-azimuth-detecting azimuth widths, detecting an azimuth corresponding to a vertex of an approximate isosceles triangle with respect to each of the central-azimuth-detecting azimuth widths, and performing weighted averaging on the detected azimuths.

3. A radar system comprising:

reception-signal-strength-distribution detecting means for transmitting a beam of detection radio waves having a predetermined azimuth width extending from the left to the right of a predetermined azimuth at the center, receiving a reflected wave from a target, changing a central azimuth of the beam, and detecting the distribution of reception signal strengths at predetermined angular intervals and for each predetermined distance; and

target-central-azimuth detecting means for detecting an azimuth corresponding to a vertex of an approximate isosceles triangle as a central azimuth of the target on the basis of a beam azimuth width, a reception signal strength at an azimuth corresponding to a maximum value in the reception signal strength distribution within a distance to the target, and a higher reception signal strength of two reception signal strengths at two azimuths that are

respectively separated by a central-azimuth-detecting azimuth width to the left and right sides from the azimuth corresponding to the maximum value, the approximate isosceles triangle having the beam azimuth width as its base and having two points representing the reception signal strengths on its two oblique sides when the reception signal strength distribution associated with changes in azimuth is expressed in rectangular coordinates.

4. A radar system comprising:

reception-signal-strength-distribution detecting means for transmitting a beam of detection radio waves having a predetermined azimuth width extending from the left to the right of a predetermined azimuth at the center, receiving a reflected wave from a target, changing a central azimuth of the beam, and detecting the distribution of reception signal strengths at predetermined angular intervals and for each predetermined distance; and

target-central-azimuth detecting means for detecting an azimuth corresponding to a vertex of an approximate isosceles triangle as a central azimuth of the target on the basis of reception signal strengths at a plurality of azimuths that are predetermined central-azimuth-detecting azimuth widths away from and are located on the left and right sides of an azimuth corresponding to a maximum value

in the reception signal strength distribution within a distance to the target, the approximate isosceles triangle having a plurality of points representing the reception signal strengths at the plurality of azimuths on its two oblique sides when the reception signal strength distribution associated with changes in azimuth is expressed in rectangular coordinates.

5. The radar system according to Claim 4, further comprising means for performing processing, if the length of the base of the approximate isosceles triangle is smaller than the beam azimuth width of a main lobe of the beam, such that an azimuth corresponding to the vertex of the approximate isosceles triangle is not treated as a central azimuth of the target.

6. A radar system comprising:

reception-signal-strength-distribution detecting means for transmitting a beam of detection radio waves having a predetermined azimuth width extending from the left to the right of a predetermined azimuth at the center, receiving a reflected wave from a target, changing a central azimuth of the beam, and detecting the distribution of reception signal strengths at predetermined angular intervals and for each predetermined distance; and

target-central-azimuth detecting means for detecting an azimuth corresponding to a vertex of an approximate isosceles triangle as a central azimuth of the target on the basis of a reception signal strength at an azimuth corresponding to a maximum value in the reception signal strength distribution within a distance to the target and also, on the basis of a lower reception signal strength of two reception signal strengths at two azimuths that are respectively separated by a central-azimuth-detecting azimuth width to the left and right sides from the azimuth corresponding to the maximum value or a plurality of reception signal strengths at a plurality of azimuths located on the same side as the azimuth corresponding to the lower reception signal strength, the approximate isosceles triangle having a plurality of points representing the reception signal strengths on one of its oblique sides and having the beam azimuth width as its base, when the reception signal strength distribution associated with changes in azimuth is expressed in rectangular coordinates.

7. A radar system comprising:

reception-signal-strength-distribution detecting means for transmitting a beam of detection radio waves having a predetermined azimuth width extending from the left to the right of a predetermined azimuth at the center, receiving a

reflected wave from a target, changing a central azimuth of the beam, and detecting the distribution of reception signal strengths at predetermined angular intervals and for each predetermined distance; and

target-central-azimuth detecting means for detecting an azimuth corresponding to a vertex of an approximate isosceles triangle as a central azimuth of the target on the basis of a reception signal strength at an azimuth corresponding to a maximum value in the reception signal strength distribution within a distance to the target and one or a plurality of reception signal strengths at one or a plurality of azimuths that are one or a plurality of central-azimuth-detecting azimuth widths inside (left or right) the azimuth corresponding to the maximum value, the approximate isosceles triangle having a plurality of points representing the reception signal strengths on one of its oblique sides and having the beam azimuth width as its base when the reception signal strength distribution associated with changes in azimuth is expressed in rectangular coordinates.

8. A radar system comprising:

reception-signal-strength-distribution detecting means for transmitting a beam of detection radio waves having a predetermined azimuth width extending from the left to the

right of a predetermined azimuth at the center, receiving a reflected wave from a target, changing a central azimuth of the beam, and detecting the distribution of reception signal strengths at predetermined angular intervals and for each predetermined distance; and

target-central-azimuth detecting means for detecting an azimuth corresponding to a vertex of an approximate isosceles triangle as a central azimuth of the target, if an azimuth at which a reception signal reaches its maximum value is located at an end (left or right) of a detection azimuth angle range, and if the condition that the ratio of an azimuth width obtained by subtracting a central-azimuth-detecting azimuth width from half the beam azimuth width to half the beam azimuth width is smaller than the ratio of a reception signal strength at an azimuth that is a central-azimuth-detecting azimuth width inside (left or right) an outermost azimuth corresponding to a maximum value in the reception signal strength distribution within a distance to the target to the outermost azimuth corresponding to the maximum value is satisfied, on the basis of the signal strength at the outermost azimuth corresponding to the maximum value, the reception signal strength at the azimuth that is a central-azimuth-detecting azimuth width inside the outermost azimuth, and the beam azimuth width, the approximate isosceles triangle having the beam azimuth width

as its base and having two points representing the reception signal strengths on its two oblique sides when the reception signal strength distribution associated with changes in azimuth is expressed in rectangular coordinates, and if the above-described condition is not satisfied, on the basis of a reception signal strength at an azimuth corresponding to a maximum value in the reception signal strength distribution within a distance to the target and one or a plurality of reception signal strengths at one or a plurality of azimuths that are one or a plurality of central-azimuth-detecting azimuth widths inside (left or right) the azimuth corresponding to the maximum value, the approximate isosceles triangle having a plurality of points representing the reception signal strengths on one of its oblique sides and having the beam azimuth width as its base when the reception signal strength distribution associated with changes in azimuth is expressed in rectangular coordinates.

9. The radar system according to Claim 6 or 7, further comprising reception-signal-strength-distribution correcting means for subtracting, if the reception signal strength distribution within a distance to the target extends further than the beam azimuth width in the azimuth direction, a distribution corresponding to the isosceles triangle having the azimuth of the target detected by the target-central-

azimuth detecting means as its vertex and having the beam azimuth width as its base from the reception signal strength distribution.

10. The radar system according to Claim 9, wherein the reception-signal-strength-distribution correcting means sequentially subtracts a distribution for the isosceles triangle corresponding to a target whose central azimuth is detected from the reception signal strength distribution.

11. The radar system according to any one of Claims 1 to 3 and 6 to 10, wherein the reception-signal-strength-distribution detecting means varies the central azimuth of the beam within a detection azimuth angle range, and the target-central-azimuth detecting means further comprises means for varying the central-azimuth-detecting azimuth width according to an azimuth corresponding to a maximum value in the reception signal strength distribution within a distance to the target.